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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/444,819	11/22/1999	SHUICHI KIKUCHI	10417-006001	9133

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EXAMINER

RAO, SHRINIVAS H

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 12/14/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/444,819

Applicant(s)

KIKUCHI ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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Response to Amendment

Applicants' amendment filed September 24, 2001 has been entered on October 04, 2001.

Therefore claim 1 as amended by the amendment of 9/24/01 and presently (newly) added claim 19 and claims 2-4, 8-10 and 17 as originally filed are currently pending in the application.

Election/Restrictions

Applicant's election without traverse of the claims 1-4, 8-10 and 17 (by telephone) and confirmation by Att. Chris T. Mizumoto (Reg. No. 42,899) on December 06, 2001 between 10-11.00a.m. is acknowledged.

Drawings

The corrected or substitute drawings were received on September 24, 2001 . These drawings are forwarded to the draftsperson for his review and approval.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Bulucea (U.S. Patent No. 6,127,700 herein after Bulucea).

With respect to claim 1, Bulucea describes a semiconductor device including :

A source region (Fig. 13 # 133, col. 20 line 3), a channel region (fig. 13 # 137, col. 20 line 8), a drain region (Fig. 13 # 135 col. 20 line 5), a gate electrode (fig. 13 # 141, col. 20 line 12) disposed above the channel region and a drift region (fig. 13 # 136, col. 20 line 7) adjacent to the channel region and extending to and below the drain region , wherein the drift region (136) is formed shallowly at least below the gate electrode but formed deeply in a neighborhood of the drain region (fig. 13).

With respect to claim 2, Bulucea describes a semiconductor device including :

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A first conductivity type well region (fig. 14 # 81, col. 20 lines 25-26) formed in a first conductivity type semiconductor substrate (fig.14 # 82, col. 20 lines 24-25) ; a gate electrode (fig. 14 # 91, col. 17, line 64) formed on the substrate via a gate insulating film (fig. 14 # 90, col. 17 line 64) ; a first conductivity type body region (fig. 14 # 89, col. 14 line 23) formed to be adjacent to the gate electrode ; a second conductivity type source region (Fig. 13 # 133, col. 20 line 3), a channel region (fig. 13 # 137, col. 20 line 8) formed in the first conductivity type body region eg. # 88, 157etc. , a second conductivity type drain region (Fig. 12-14 n# 85 col. 15 line 4) formed at a position remote from first conductivity type body region, a gate electrode (fig. 12n-14 # 91, col. 13 line 64) and a second conductivity type drift region (figs. 12 n- 14 # 65) formed shallowly from the channel region to the drain region , at least below the gate electrode and formed deeply in a neighborhood of the drain region.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4, 8-10,17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bulucea (U.S. Patent No. 6,127,700 herein after Bulucea) as applied to claims 1-2 above, and further in view of Blanchard (U.S. Patent No. 5,869,371, hereinafter Blanchard).

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Claims 3-4 and 10, 17 and 19 were said to be allowable because they depend upon alleged allowable independent claims 1, 2, 8 or 9.

However as shown above (and below –response to Applicant's arguments section below) independent claims 1, 2, 8 or 9 are not allowable therefore dependent claims 3-4, 10, 17 and 19 are also not allowable.

As claim 19 is newly added, a separate rejection follows.

With respect to claim 19, wherein the second conductive type drift region (Bulucea fig. 12n # 86 formed adjacent # 89) is formed adjacent to the first conductive type body region (Bulucea fig. 12 n # 89).

Response to Arguments

Applicant's arguments with respect to claims 1-4, 8-10 and 17, 19 have been considered but are moot in view of the new ground(s) of rejection.

(With respect to claims 3 and Bulucea col. 17 line 26 teaches arsenic implantation, col. 18 line 34 teaches Phosphorus implantation and col. 19 lines 34 teaches Boron implantation.

With respect to claims 8 and 9 Bulucea teaches a second MOS transistor with a low concentration of source-drain region formed adjacent to the second gate electrode , a high concentration source-drain region and a middle concentration source/drain region) .

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is 703-306-5945. The examiner can normally be reached on M-F, 8.00 to 5.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703- 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703- 308-0956.



December 6, 2001



OLIK CHAUDHURI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800